

The double density newsletter for Heath/Zenith computer support

BITS & PIECES

MEDALLION FEEDBACK

I want to thank all of you who have supported Quikdata and myself through this medallion change. I have received many letters and phone calls of concern, and very many copies of letters many of you have written to John Frank, President of ZDS. I will say I have not heard one word from John Frank.

I was also disappointed that my sales rep, Jim Gibbons never even so much as called to say "sorry about what happened, nice dealing with you in the past" or any such thing. I figure that in the time we dealt with Zenith, we have pumped many of millions of dollars into Zenith and to be let go without a thank you or anything else did not feel very good.

Here is an interesting letter that I received. I'll leave off the name: "I was sorry to hear about the raw deal that you got from ZDS. As a former Zenith engineer (not of Heath, ZDS, or any related division), I want to confirm your suspicions that many Zenith employees are afraid to speak out, at least in public. But there was constant internal criticism of the top executives for their record of notoriously poor decisions.

"In fact, the many good employees with whom I worked had a rule of thumb for predicting the outcome of any rumor currently spreading through the office: The decision that would be made would be the one that was the opposite of what made sense to those directly working in that area. This feeling, as well as the tales of specific bad decisions that I heard from my co-workers who had been there much longer than I, dated from far before Zenith purchased Heath or had anything to do with computers. The consensus of employee opinion was that Zenith survives in spite of its executives, not because of them.

"I just thought that you would like to hear from one of your customers who is presently a Zenith computer hobbyist, but was for a little while an employee of that corporation."

I'd like to print some of the feedback I have received, but it would take away space needed for better things. I do like the closing written by one of my customers. He writes: "In closing I would like to note the similarity of Zenith's latest blunder (blunder includes keeping the television manufacturing and selling the computer end) to that of one of our commercial airlines who is currently having difficulties staying afloat. I depended on one of their flights so I was surprised to discover it suddenly had been canceled. I was more puzzled since the flight was a popular one and was always full. I had an opportunity to ask an executive of the airline (both the executive and the airline shall remain nameless to protect the stupid) why such a popular flight was canceled. He looked at me as if I did not have the brains God gave to a screw driver. That flight was discontinued because the marketing research showed there was no potential for growth!"

The last thought I will leave on this is what about the thousands out there who have already purchased Zenith computers, perhaps through mail order, who do not have Zenith dealerships in their areas. This translates to never never land for them. They will not be able to obtain anything else Zenith related for their systems. Forget Zenith memory expansions, laptop batteries, lap-

top carrying cases, accessories, drives, etc. Fortunately we continue to carry drives, cabinets, modems, etc., for these systems. I guess it's just tough luck for them!

OK, now that we can no longer handle Zenith computers, **I'd like feedback from any of you who have alternate brands and your experiences with them.** I was trying for Everex, but they also will not deal mail order. I'm going to be checking into two other good brand names, WYSE and AST.

ZENITH/BULL DISPUTE

Well, it looks like Zenith and Bull are off to a good start! Bull asks for \$49 million refund on ZDS buy, and Zenith says Bull owes them \$49.5 million additional payment for computer business! How wonderful.

Groupe Bull is demanding a \$49 million refund on its \$496.4 million purchase of ZDS after a significant tail-off in ZDS business that started in late 1989. Zenith Electronics Corp., which sold the computer business to Bull in December disputes the request claiming that post-purchase asset valuations made by Bull appear to be in conflict with the provisions of the purchase contract.

A settlement of the dispute in Bull's favor would lower the purchase price for ZDS for the second time. It was described as being worth as much as \$635 million in October 1989, then reduced to \$550 million at the time of closing. Bull was expected to make an additional payment beyond the \$496.4 million after determining the net asset value of ZDS as of December 28th, the closing date. Bull now, however, is asking for a \$49 million refund plus interest.

The new valuation was made due to both a decrease of inventories as well as of the ZDS market itself. With all the liquidations the had going on and the laptop TurbosPort dumping, I wonder.

Bull said the late 1989 decline in demand for Zenith PCs caused a lower value. Zenith acknowledged that ZDS had a substantial deterioration of business during december, expecting a \$22 million forth-quarter gain while it in fact said a net loss was anticipated. Bull said that this should be reflected in the final sale price.

The ZDS business decline follows their loss of a \$700 million desktop Air Force PC contract to Unisys. They also recently had a \$534 million PC upgrade contract from the Defense Department suspended because of protests by other bidders. It was thrown out by the General Services Administration (GSA).

If this cannot be settled within 60 days, the matter would be referred to the Ernst & Young auditing firm for arbitration.

From a Zenith news release, March 16, 1990, Zenith Electronics Corporation concluded that Groupe Bull owes an additional \$49.5 million for Zenith's computer products business. As provided for in the purchase agreement, an adjustment to the closing-date payment is to be made, including interest from the closing-date, based on application of the contract terms to valuations of the net assets sold.

For 1989, discontinued operations (the computer products business sold to Groupe Bull) had an estimated new loss of \$51.4 million, or \$1.92 per share. Included in this figure are estimated

computer operating losses of \$70.4 million and the estimated gain on the sale of \$19 million, net of costs and expenses.

ANAPRO FEEDBACK

Pete writes: So here we are in 1990. Sorry for the long silence on my part. A man is known not by what he thinks, but by what he writes, and write I shall. I am now down to only two jobs - programming in COBOL on an IBM 3090 mainframe for the county and teaching C and BASIC programming classes in the evening.

It is interesting that I got into working with the mainframe at this point in time. The future of computing seems to be heading towards the use of PC type microcomputers tied to a mainframe for database access. The IBM 3090 mainframe seems destined to become a fast file server! Also, the latest and greatest in the micro world is the integration of text, high quality sound and video quality imaging on the display screen. Seems that all this should come about in the next two to three years as things go.

Still too early to predict the final outcome, but even IBM is now looking into supporting UNIX. For those of you who are not aware of it, the Motorola 68000 series of processors represents the largest base of computing micros around. It is just that the IBM PC with its 8088 was far more visible to the public. The Motorola part is in industrial use and not so much in home applications. Apple, Commodore and Atari are all using the 68000 processor for home type of computers, but they never standardized on an operating system.

Until recently, UNIX was far too expensive to implement on small systems. This was not due to high software cost, but because the required memory was so slow and expensive. Now that prices of hardware have come down so much, we may be seeing more support for UNIX. Stay tuned! As for myself, I am not willing to bet on anything yet. There are too many struggles going on between the players. OS/2 may still get going and win a market if only because IBM will want it to.

I can't submit this article without making my own comment about Quikdata's loss of the Zenith dealership. It is a sad occasion when something you had grown used to and fond of is taken away. But we must also recognize that times change and the old H8/H89 days are now gone. Notice that the computer marketplace is no longer one where almost anyone can make a few dollars in. The camaraderie that was once the norm is no longer there for the newcomers. The loyal readers of H-SCOOP need to recognize that Quikdata and H-SCOOP can both continue to serve them. Only the Heath/Zenith trademarks will no longer be the binding force.

I read the comments about "how unfair it is" and the "need to write letters to Zenith management" with a bit of amusement. We should recognize that our group represents but a small segment of the buyers. Most computer buyers I saw while operating my Radio Shack knew nothing about computers, nor did they care about what they bought. Zenith may be wrong in their decision. They may earn a reputation for poor products and service. But right or wrong, with the backing of Bull, it is not likely that they will end up the way of Kaypro. Let us stop blasting Zenith and trying to get even. Instead, concentrate on the benefits of sharing our experiences, enjoy each others company, and look forward to the future with Quikdata and H-SCOOP as the meeting place.

[editors note: I am not trying to get even and if that thought was conveyed, I apologize. What I was attempting to do was to make upper management aware of what is going on here and let them know especially how others feel, and that there is a world outside of their offices! I have to wonder if top brass like John Frank even knew of Quikdata's existence and how many happy Zenith customers there have been because of dealers like us. One of the major problems I felt Zenith had, and this also applies to

many other large corporations, is their total lack of communication between hierarchy levels, departments, dealers and end users, etc.]

Now a bit of news for the H89 users. I got to playing with the 4MHz mod again and came up with a configuration which may suit some of the tinkerers out there. The H89 may be run at 4MHz without any changes in software as long as the H17 controller is not used. For those that use the H17, software patches must be made to allow the speed to be switched back to 2MHz while the H17 is being accessed. The ANAPRO mod does include patches for most CP/M configurations as well as for HDOS. However, there may be a situation where no patch is available. I have now found a hardware solution to the problem. Instead of using software to do speed switching, tie the speed control line of the 4MHz mod to the H17 motor control line! The needed signal is available at pin 4 of U814 on the H17 controller board. It is also tied to pin 16 of the 34 pin ribbon cable going to the drives, but the signal at pin 2 of U814 should be cleaner. Because the connection is not on the CPU board, the wiring becomes a bit of a cludge but it does work. So there you have a possible weekend project for those who want to tinker.

With the new year here and with Henry's need to evaluate his future, I too have reflected a bit on my own situation. Here I am, 44 years old; an experienced electronics circuit design engineer; a Master's degree in Business Administration; able to program in different languages in a single bound; a recent Master's degree in computer engineering; and I am fluent in the Russian language [I think you're over educated Pete!]. So here I am living in a location where housing prices are almost equal to those in Los Angeles but salaries are about half because there are no jobs! What to do? Say Henry, should we merge our skills and collaborate in writing a science fiction novel or something? [Wish I had the time. I had intended to do so much writing for computer journals - it simply never happened. Here it is after 10PM and I'm working on H-SCOOP because there's no time to do it during the day. I'd like to get folks like Lee Hart, Pete, Dave Brockman and others together and start a super support company for H/Z. But since too many want too much for too little, we'd probably go bankrupt in a matter of weeks!]

Peter Shkabara/ ANAPRO/ 8895 Pino Solo Ave/ Atascadero, CA 93422/ (805) 466-4284.

MISCELLANEOUS BITS

* For those who may be interested in the **updated Zenith DOS 3.3 plus files**, I now have them on the download section of our bulletin board. In addition there are some excellent VGA graphic displays. There is also a list on the board that was uploaded by Dave James, which is the model number decoder for Zenith computers which will help explain exactly what you have.

* Don Deck reported that the **Compaticard would not work properly in the Z386/33** unless the speed was set slow. The Compaticard IV worked fine. Then he used the updated files which I have posted on our bulletin board in the download section (CC*. files) and all worked fine with the Compaticard at high speed.

* Because of the sequencing power supplies used in the newer Zenith computers (starting with the Z248/12) the **CMS DJ-10 JUMBO tape system** (TAPEBACK is our catalog order number) **did not work properly**. We now have the units in stock with a new IC that takes care of that problem.

* The **Z181 may hint of an expansion bus** being available, but there is none. The connector on the rear does nothing. There is no support circuitry inside the computer for an expansion bus. We are investigating a unit marketed by UCI Corp. which uses a parallel port to allow a three, five, or eight slot expansion box on any computer. Sounds kind of strange to me, but then UCI has

pulled off some other strange things in the past. In this case, they may be the ones supporting the thing and bringing it to our attention and possibly enhancing it. Idications tell me it originated elsewhere.

OK, I've checked it out and elsewhere in this newsletter you'll find the info on it and more surprises from UCI.

* Some of the **ESDI controllers for the Z248/12 and Z386 machines may have had some problems.** First off, they were shipped with switch 4 set on and it should have been off. Don't know what it does, but that's what I was told. Also, there is an A2 version of the ESDI 16A ROM.

And talk about problems. Next month I may have it all under control, but right now the addition of a 150mb ESDI drive in my Z248 with AOX 20Mhz Z386 CPU card has not worked. I am now back to a Z248 8Mhz machine with 150mb ESDI drive on it. System is very slow and we have lost our network going to DOS 3.3 plus. Major nightmares around here because of this "easy" upgrade. More on adding ESDI drives maybe next month.

* Nord Holte wrote me a note saying he has purchased the **Weltec external hard drive unit for his laptop.** He said he got it from J&R Music World for \$620 (reasonable considering the \$995 list) and it works fine.

* Trying to find a replacement laptop line may not be easy. I just read in InfoWorld that Toshiba repair delays are up to five months. The article said the problem was nationwide. I would not want to carry a line that would give me a bad name.

Send me your feedback on other non-Zenith laptops that you may be using that you are happy with.

* Dan Jerome tells me that he has now completed up to **chapter 8 of HDOS 3** and they are working at it. I'd still have to guess several months down the road before the final release is ready. Quikdata does plan to carry that product.

* Dan also tells me that he has been working with **WordPerfect 5.1** and has seen 5.0. He says "...they changed some of the keys and such for version 5.1. This means that if a person purchases a Sybex book on WP for version 5.0 but is writing on 5.1, the book will be only partially right." I have also noticed training aids, videos, etc. I say ditto. If you have 5.1, don't settle for 5.0 material.

* According to Terry Hall passing on info to Dan Jerome, passing on info to Henry Fale, there is an **insurance company that will insure your computer system completely**, except for \$50 deductible, for real reasonable rates. For example, they provide replacement cost for such perils as (1) Covers computers at home or at the office - except for theft from an unattended vehicle, (2) Provides replacement cost - no depreciation, (3) Replaces purchased software, even losses from a computer virus, (4) Comprehensive coverage including loss from fire, theft, vandalism, water damage, lightning, accidental breakage (but not earthquakes), (5) Special toll-free phone number for claims, (6) ten day free trial period.

Of course, they want you to have a file of all your purchase invoices, etc., available in case of a claim, but they do not want a list of them for their own use. The fees are as follows:

\$1 thru \$2000 - \$30
\$2001 thru \$5000 - \$69
\$5001 thru \$8000 - \$89
\$8001 thru \$11000 - \$109
\$11001 thru \$14000 - \$129
\$14001 thru \$17000 - \$149

According to Terry, there is no argument when you file a claim. They pay rapidly. The company name is: **SAFEWEAR/ 2929 N.**

High St/ POB 02211/ Columbus, OH 43202-0211/ (800) 848-3469. VISA or MC accepted.

* Jerry Seefeld had a problem where he could **boot CP/M just fine on his H89, but no luck at all with HDOS.** After much head scratching and code analysis he discovered the problem. **HDOS requires CTS handshaking to the terminal**, whereas CP/M does not. I've seen this on the H8 several times before in relation to our Quikstor, but I forgot all about it. Jerry said it's the orange wire on the 15- shell to DB25 connector on the rear of the H89.

And as for booting off hard disks like the Quikstor, Jerry made note that you can **boot off any partition from the monitor ROM** by doing a **B** (for boot) followed by the partition number you want to boot from. For example a B:3 would boot you directly off the third partition on the partition table without having to actually bring up the partition table. This may be useful, he observes, for those having odd terminal board ROMs like the Watzman ROM which stripped out the ANSI code. For those of you who have the Quikstor, you'll remember an ANSI ROM is needed to bring up the partition table. Jerry says this is a way around that. I'm not sure, however, just how high ROM will allow you to boot in the table, as ours has a capability of 15 partitions.

VENDORS

Note: All items for submission must contain the vendor or individual's name, address and phone number for consideration of inclusion in this column. All announcements must be kept short and to the point. The smaller the end user's need or desire for a product being mentioned, the shorter the announcement must be. Any lengthy announcements will no longer be considered for editing.

Please note that **H-SCOOP** is a separate entity from QUIKDATA, Inc. Products mentioned in **H-SCOOP** are only carried by Quikdata if specifically mentioned.

Z100 DISKPACK FOR PC FORMATS

Many of you have been asking and patiently waiting, and it has finally arrived. Paul F. Herman Inc., announces the release of DiskPack: A Floppy Disk Device Driver Package for the Z-100. DiskPack is a software package which allows you to use many popular floppy disk formats on your H/Z-100 computer, including PC compatible formats. Aside from the floppy drives and cables, no additional special hardware is required - all formats supported by DiskPack are provided using the standard Z-207 floppy disk controller already installed in your Z-100.

The DiskPack driver supports all popular 8 inch, 5 1/4 inch, and 3 1/2 inch floppy disk formats. This includes the standard Z-100 formats, as well as AT compatible 1.2 Meg 5 1/4 inch drives, and 720K or 1.4 Meg 3 1/2 inch formats. Additional formats are also available, some of which provide even greater capacities.

DiskPack includes the DiskPack driver, a configuration program to setup the driver, a FORMAT program and format information utility. Any Z-100 with a stock Z-207 controller card may be used with DiskPack. MS-DOS V2 or above is required. Price is \$39.00.

DiskPack is available from both Quikdata, Inc., and Paul F. Herman, Inc./ 3620 Amazon Drive/ New Port Richey, FL 34655/ (800) 346-2152. We can both supply you with disk drives, enclosures, cables, diskettes, etc.

UCI LAPTOP/PC EXPANSIONS

We've seen how UCI came up with the perfect solutions for the Z100 computer. Their Easy PC actually put a PC computer into the Z100 making it both Z100 and PC compatible. A much more

compatible, faster and better method than Gemini used for their PC emulator. Then we saw the Z100 hard disk controller which allowed one to easily and inexpensively add a hard disk to the Z100 (although there were some problems with that one). They later announced a PC expansion chassis, which never materialized - but wait!

I contacted UCI a few weeks ago, and now they tell me they have added some unique products to their product line. Products that will work with any PC computer, including laptops, via a parallel port. One is a PC expansion chassis and the other is a hard disk drive. Keep in mind, by working with any PC with a parallel port (which is all of them I guess) this includes laptop computers. They also mentioned that down the road will be a floppy drive unit for any PC which again interfaces via parallel port. I suppose the later two are just special applications of the expansion chassis.

First for the expansion chassis, the **ex-PORT**. The ex-PORT is an expansion chassis which connects to the parallel port of any laptop or desktop PC. One slot connects the host computer via a parallel printer cable to the driver card, the remaining slots accept modems, hard drives, controllers, additional ports, network cards, analog/digital controller cards, etc. From what I could figure out, they did not come out with the ex-PORT, but are purchasing it from another company called LIGHTTEK. I'll investigate that later.

Features three 8 bit PC compatible slots (for the 3xP series, 5 for the 5xP series and 8 for the 8xP not yet available); auto increment/decrement memory address mode for high-speed block memory transfer; program selectable memory/IO modes; latched addresses for repetitive read/write; pseudo DMA mode supports channels 1-3; internal crystal bus clock supports host computer of wide speed range; seven levels of vectored interrupts supported via IRQ5 or IRQ7. Interrupts can be enabled or disabled by software; internal switching power supply and cooling fan; all-metal cabinet.

There are two models currently available. The 3 slot which retails for \$495 will allow two additional cards to be added, and that's all it has. The 5 slot model which retails for \$595 will hold 4 additional cards plus two 3.5" devices like floppy or hard drives. In each case, the parallel port on the computer is not lost, but can still be used.

I wondered how a parallel port can transfer the bus. I talked to UCI about this and what they are basically doing is passing the information from the PC to the parallel port where it is decoded back into the proper signals to set up a PC bus inside the unit. The transfer rate is 1 megabit per second. A 1.5K device driver communicates to the printer port the PC information and converts it back to an XT bus. Very ingenious.

But does it work? I don't know. Knowing UCI it will work. I did order one of everything to allow me to do some tests and see exactly how it works. I will report on that in a later issue.

The next item is a hard disk drive. I have had so many requests for folks with laptops wanting to add a hard drive to their system. It has been impractical up to now. Only one company I know of, Weltec, presently has anything like this, and I mentioned that in H-SCOOP several issues back.

It sounds like this basically does the same thing as their expansion chassis. The hard drive unit interfaces to the PC via a parallel printer port with a standard parallel printer cable. The printer port can still be used for printer applications simultaneously.

I'll hopefully report more on this in the next issue. If all goes according to schedule I plan to have the 3 box unit which will house two cards. This will satisfy users who simply want to add a card or two at lowest cost. Just keep in mind, we will be far below retail costs. We also plan to have the 5 slot version, which would

be a good one to use for adding floppy/hard drives, etc. I've been very busy so I won't promise anything, but I'll try to at least do some basic tests. Perhaps somebody with more time would like to evaluate some of this for me? Deal is, if you like it, you get to keep it for cost, plus if you want to write a report, you'll get paid for it. If interested, contact me.

ASK HANK

Question from Fred Garcia: I have a wee problem. It involves my printer. I bought an IBM clone, and Advantage 286/12 with all the usual bells and whistles. I still have the H89-A and use it quite often. I use my H-89-A with an Epson LQ-800 on a serial port (340/347Q) and it works like a charm. The Epson uses a DIN-6 plug with only 4 wires connected like so:

Heath DB-25	Epson DIN-6
1	6
3	3
7	5
20	2
DTR set high	1 & 4 not used

The printer is set for 4800 Baud. From the Heath books I concluded the output was 8 bits, no parity and 1 stop bit. Using MS-DOS MODE in a CONFIG.BAT file to set up the 286 (4800 baud, no parity, 8 bits, 1 stop bit), MODE again to redirect LPT1: to COM1:, I connected the Epson to the 286 and tried it. Zilch. It that happened was the 286 locked up and had to be rebooted. Switched over to the parallel side and the 286 drove it beautifully. I had hoped to be able, by means of an A-B box to use the printer in a serial mode with either computer. I mentioned the problem to the yo-yos where I bought the 286 and they couldn't have cared less. Massive disinterest. [so what's new?]

I was wondering if you had any ideas off the top of your head?

Answer: Well, nothing on the top of my head, but if I dig a bit, I can say it sounds right away like a handshaking problem. If stop bits, parity, baud, etc., are not correct, the printer usually prints, but prints garbage. When handshaking is not correct, either the buffer gets overflowed in which case you'll start missing characters, lines, paragraphs, or the computer will simply hang up when trying to print because it never gets a printer ready signal and sits there waiting forever for it. Thus I assume you have a handshaking problem with your DTR line, which is line 20.

First analyzing the lines used, 1 and 7 are simply ground lines, and 3 is the computer transmit data line to the printer. 20 is a handshaking line, RTS in this case.

I don't know if this will help you or not. All I can do is go through the procedure you would use with Zenith/Bull DOS. One thing nice about their DOS that many others do not have is the CONFIGUR utility that makes printer configuring easy. I'm not sure how other DOS versions handle this, so perhaps you can translate it. The bottom line is to find a way to get the handshaking recognized. And since you indicate the Heath computer used line 20, this is RTS and not DTR.

When you run CONFIGUR, this is what it will ask. Response is in **BOLD** print.

Strip parity on input: **Y** (generally printers do not use parity)

Strip off parity on output: **Y** (ditto)

Map lower case on input: **N** (if your printer can handle upper and lower case, you don't want to have all upper case letters printed)

Map lower case on output: **N** (ditto)

Select appropriate BAUD: **4800** (printer must be set same as computer)

Select appropriate number of stop bits: **1** (generally, all printers use one stop bit)

Select appropriate parity: **NO PARITY** (since we're stripping off the parity bit, we're not concerned about it anyway)

Select appropriate word length: **7 or 8** (this is a tougher one, as some printers use 7 and some 8. Generally 7 was used with the H8/H89, unless graphics was passed to the printer, which is the 8th bit. All ASCII characters are represented by a 7 bit word. The 8th is generally ignored or used for graphics. I'd suggest trying 8 here, and if there are problems, then try 7. The wrong choice here, however, will not cause your system to hang.

Select appropriate handshaking: This is not a simple answer. Many choices are given such as none, XON/XOFF (which is CTRL Q and CTRL S), DTR positive, DTR negative, RTS positive, RTS negative. Since line 20 is being used, I'd start with **RTS Positive**. Then if the system hangs after you save everything and reboot, go back and try RTS Negative. One of these has to work. Then you can go back and find tune word length, etc.

Pad characters: **0** (most printers do not require PAD characters. This was a carry over for the old slow bufferless printers, and gave the head time to get back to the home position before it would print again. When ever the printer would receive a carriage return, it would wait the amount of time specified in PAD characters before it would start to print again. This would give the print head time to get back to the left hand margin side before it would try to print. If this was too small, you could lose characters at the beginning of a line. I remember my DECWRITER II LA-36 required these.)

Time out: **0** (I believe this is the time value for the computer to try to communicate with the printer before it would give a message "printer not ready, retry, abort, ignore?" message. This happens when the printer is not turned on, paper is out, etc.)

Then update memory and disk and always reboot the system before you try to print. My favorite initial test is to do a CTRL-P and DIR or something. If it hangs, reboot, change the handshaking, and try again. I'm not a big MODE user or fan, so I can't say if you are able to set handshaking with the MODE command in case you don't have Zenith/BULL DOS, but I'm sure there must be some way.

As a last resort, you can always slow the printer down to the point it will not require handshaking. For example, if you have a printer that can print 200 cps, you will never require handshaking to activate until you start outputting characters to the printer faster than what it can print and/or overflow its print buffer. If you can print at 200 cps, if you set baud to 1200, or about 100 cps, you should never overflow your buffer. The next choice of 240 which is just over 200 cps may get pretty close, especially for long documents.

Hope this helps. Let us know.

TECH FORUM

Z248/12, Z386 PARALLEL PORTS

After months of headaches and frustrations, the parallel port problem in the Zenith Z248/12 and Z386 computers mentioned previously in this newsletter has been solved. This problem involved attempting to add additional parallel ports to these computers so one could use LPT1:, LPT2:, and LPT3: to drive several printers. If you have ever tried this and were unsuccessful trying to add parallel ports to these or other computers, this may

also be at least part of the answer.

The hardest part to comprehend about this episode is that **absolutely nobody at Zenith seemed to know anything about this problem**. And these computers have been out for well over a year now! It seems that nobody else in the world has ever had a need to have two or three parallel ports active in their system to drive more than one printer or whatever. Once again, we were the guinea pigs for this project.

I have to thank Ed Woodward, Marketing Support of ZDS for his assistance in this matter. Other Zenith agencies, including the ZDS Dealer Tech bulletin board, HUG bulletin board, CIS, or others were absolutely of no assistance.

First problem was discovered middle of last year when Dave Kaat, a Culligan dealer who sold Zenith systems with his very specialized Culligan software package, purchased a Z248/12 from us and wanted to drive two printers. No problem, we sold him a BOCA IOAT42 I/O card which contains two extra AT serial ports and one parallel port. Set it for the second port, attached the printer and tested it. Both printers responded simultaneously whenever LPT1: was addressed, but non when LPT2: was addressed. Since our original Z248 8Mhz systems worked fine, we knew something was not kosher. We next tried the Dr. Dr. Zucker AT four pack which supplies one parallel port LPT: 1, 2, or 3 and two selectable serial ports COM 1, 2, 3 or 4.

We even tried an Everex EGA board with a parallel port. We could not get any of these boards to function with a second printer as LPT2:. We played with jumpers and tried everything imaginable, but nothing would work. Calls to the respective companies informed us that the cards worked fine in all the other AT clone computers they ever tried them in and they could not understand it.

If you recall a few months back (issue #116 (November '89 - that's when this problem started), page 5, ASK HANK) I printed a DEBUG routine that would show you if the system recognized the I/O cards at a system level or not. That was supplied to me by the tech department at Dr. Dr. Zucker, and it showed only LPT1: was being recognized by the system. Well, looks as though Zenith was doing something strange once again and shooting PC compatibility out the window. But the problem this time was they did not even seem to be aware of it!

Well Ed did lots of on-hands work with several computers and I/O cards. We sent him the Zucker card. He eventually hit on the key. In fact, long before that, Dave Kaat hit on the solution accidentally, but he did not know it. For a short time he had an LPT2:, but not configured as the card was supposed to be. He unknowingly solved the problem, but did not know why, nor could he later again duplicate the solution.

While most computers use interrupts (IRQs) for the port selection, Zenith, for some reason, used addressing. Since this frees up needed interrupts for other devices like mice, scanners, etc. - it may be an excellent solution - if only it was standard and/or if only ZDS had bothered to tell somebody, anybody, about it (or at least mentioned it in their computer manuals!). But like I said before, it appeared that absolutely nobody, not even their software and hardware engineers were aware of why were having these problems. That scares the hell out of me and again confirms my suspicions that at ZDS, one hand does not know what the other is doing! Some ZDS folks we spoke to ignorantly suggested that PC/AT compatibles did not support more than one parallel port! Others suggested that special drivers were needed. I mean, it was like a circus of absolute stupidity!

And we discovered that ZDS use the port selection in a strange way. That is why the other cards would not work. That is why a second Zenith card would not even work. That is even why DEBUG would not recognize the other ports. And to add frosting to the cake, it turns out that unknown to even Zenith, the main

culprit was the Zenith I/O card, the 82C605E (which is the standard 2 serial port 1 parallel port in the Z248/12, Z386, etc.) that was already installed in the system.

What was discovered is that the highest addressed card (3BC in this case) is always and unconditionally LPT1:. The next lower address card (378 in this instance) would automatically be LPT2:, and the next lower addressed card (278) would automatically be LPT3:. Forget about the industry standard interrupts and don't tell anybody - not even yourselves! However, don't let this confuse you, because there's more to the story. If there is only one card in the system, and it's 378 that would be LPT1:. If it's 278 then that would be the highest addressed card, and it would still be LPT1: Following me? If you only have one card, it doesn't matter because it's the only card, and thus the highest addressed card. The fun starts when there are two or three cards.

The problem which took a long time and lots of sweat to figure out was that the Zenith card was always 378. Since it was the highest addressed card in the system, it was LPT1: - it was the only installed card. However, when another card was added to the system, even though its jumpers were set to LPT2:, if it was a 378 address card, it would also be LPT1:. And that's why both printers would respond as LPT1: even though one was set for LPT1:, and LPT2:.

Since the Zenith is always 378, **if we want to drive two printers, we must find a card that will work as 3BC**, and we must set the Zenith card as LPT2: with its jumpers (P-205 7-8 are jumpered for LPT2:, 9-10 for LPT1:). The way we finally did it was by using the Everex EGA/Parallel port card as LPT1:, Zenith's card as LPT2:, and the Zucker card as LPT3:. Dave Kaat informed me that the Zucker card (the latest one out only) will work properly as all three addresses.

I was also told that Greg Vigneault, ZDS Canada had written a driver that works in Z248/12 and Z386-16 machines that will allow the Zenith card to be used as LPT1: and LPT2:, if two Zenith cards are in one system. But although I was promised via the ZDS technical service center bulletin board more on this, it never happened.

So confusing as it may sound, remember that the highest card will be LPT1:, regardless of the interrupts; the second will be LPT2:, and so on. Parallel port cards that work strictly on interrupts, will not work. You will have lots of fun experimenting and trying to determine what address they are set for.

We have spent over a half year on this problem, and even though Ed of ZDS really figured it out, for an emergency situation (which they were told that it was) it is totally unacceptable for the time delay. My wish is that perhaps you can benefit from our turmoil. I am thankful that the problem is finally solved.

BASIC USE OF PRINTER CONTROL CODES

8-BIT RELATED ARTICLE

Did you ever wonder how to get various character sizes, types, enhancements, etc. from your printer? Ever want to make your 80 column printer print in a compressed mode to get over 120 characters per line? Or did you ever want to make enlarged or bold characters? If you have a printer that is capable of doing these things, and most sold today are, then this article may help you. Epson was one of the first companies (back in the 8-bit days) to come out with affordable feature laden dot matrix printers. When they did this, they came out with a special control character set to allow their printers to be changed via software commands to print in different styles. The Epson printer control set has become a defacto standard many years back. Even if your emulates some other set, this article can help you by showing you how.

Most printers on the market today, especially the popular dot matrix printers, most of which emulate the Epson control code set, allow you to set various parameters of the printers. My friend Dan Jerome wrote this article for H-SCOOP about his investigation and uses of the Epson control set for various functions.

A typical use of control codes is to set your printer to the different types of pitch, which translates into the numbers of characters per inch (CPI) such as: 10 CPI (Pica), 12 CPI (Elite), 15 CPI (Micron), 17 CPI (Compressed) and 20 CPI, (Royal). Not all printers have facilities for each of these, but most of them provide for 10, 12, and 17 CPI. I will use the Panasonic KX-P1124 printer as an example in this article. This printer is Epson code compatible as all Panasonic printers are.

But control codes are far more useful than that. For example, by the use of control codes you can secure a true underline instead of a line of dashes, you can set or change a font, obtain subscripts or superscripts, utilize proportional spacing, do emphasized print, double high, double width, double strike, print in italics, switch to an international character set, go to 8 lines per inch (LPI), set margins, set page and form lengths, skip perforation, and a number of less popular options.

Control codes may be used with either the H89 8-bit computers or the newer IBM emulating models, but the latter usually have automatic coding which largely makes manual coding unnecessary. However, even with the newer type of computers it is sometimes necessary to obtain control codes in order to obtain special effects. So, listen up!

One problem with using some of the codes with the H89 is that any control codes that require a zero to release are useless, since HDOS has been programmed to ignore zeros. For example, to turn off "Double High Printing," the code is 27,119,0 (Decimal) or 1B,77,00 Hex. Not so with the IBM computers or clones. Zeros are treated like any other code.

To illustrate in greater detail, say that we are working with an H89 Computer, and that we are using that excellent printer driver written by Jim Teixeira, UD.DVD. UD.DVD has 8 different settable printer units. Assume that we want to set up Unit 0 to print in Draft Pica mode, Unit 1 to print in Draft Elite mode, Unit 2 to print in Draft Micron mode, Unit 3 to print in Near Letter Quality (NLQ) Pica mode, Unit 4 to print in NLQ Elite mode, Unit 5 to print in Draft Compressed mode, Unit 6 to print in NLQ Compressed mode, and Unit 7 to print in Draft Royal mode. The control codes may be done in Hex or Octal, so both modes are shown.

Naturally, the source for the printer codes is in your printer manual. In the Epson Printer models they use a separate appendix for the printer control codes. In the Panasonic printer manual the codes are an integral chapter. The code conversions from Decimal to Octal to Hex to ASCII are available in chart form from your local public library or computer bookstore. In case you can't seem to find one, send me one dollar and a large SASE, and I will get one copied for you. (Dan Jerome/ 801 E. 132nd St/ Burnsville, MN 55337).

A typical control code may be expressed like this:

DOUBLE WIDTH PRINTING - SINGLE LINE (for Panasonic Printers)

Sets double width (elongated) character printing for one line only.

	SET	RELEASE
Name:	SO or ESC+SO	DC4 or ESC+W+0
Decimal:	14 or 27, 14	20 or 27, 87, 0
Hex:	0E or 1B, 0E	14 or 1b, 57, 00
Octal:	016Q or 033Q, 016Q	024Q or 033Q, 127Q, 000Q

Comment:

* Single Line, double width printing is released when:

- A CR, LF, FF, or VT is executed
- The printer is initialized
- DC4 or ESC+W+0 is executed
- ESC+!+0 is executed

The following data is a representation of typical ASCII strings as used with UD.DVD or an equivalent driver, such as the "Ultimate Driver" by Lindley Systems.

UNIT 0 - DRAFT PICA

DECIMAL	HEX	OCTAL	EXPLANATION
27	1B	033Q	ESCAPE
80	50	120Q	Set Pica Pitch, 10 CPI
18	12	022Q	Compression Off
27	1B	033Q	ESCAPE
120	78	170Q	Set Draft Mode
48	30	060Q	Set Draft Mode
27	1B	033Q	ESCAPE
50	32	062Q	6 LPI

Unit 4 - NLQ ELITE

DECIMAL	HEX	OCTAL	EXPLANATION
27	1B	033Q	ESCAPE
77	4D	115Q	Set Elite Pitch, 12 CPI
18	12	022Q	Compression Off
27	1B	033Q	ESCAPE
120	78	170Q	Set NLQ Mode
49	31	061Q	Set NLQ Mode
27	1B	033Q	ESCAPE
50	32	062Q	6 LPI

Unit 5 - DRAFT COMPRESSED

DECIMAL	HEX	OCTAL	EXPLANATION
27	1B	033Q	ESCAPE
80	50	120Q	Compressed
15	0F	017Q	Compression On
27	1B	033Q	ESCAPE
120	78	170Q	Set Draft Mode
48	30	060Q	Set Draft Mode
27	1B	033Q	ESCAPE
48	30	060Q	8 LPI

A typical ASCII string (for draft compressed) looks like this:
033Q, 120Q, 017Q, 033Q, 170Q, 060Q, 033Q, 060Q

Each printer may require a different printer code protocol, except for the Panasonic and Epson type of printers. These usually require the same, or nearly identical, printer codes. For example, the Panasonic KX-P1124 emulates the Epson LQ-2500. Therefore, the codes are the same. If you have any questions, consult your printer manual, since the protocol will be called out in the manual.

This code is automatically sent to the printer first, where it resets the printer, so that when you send your ASCII file to the printer, it is ready to print your file the way you specified.

Other printer protocols also, such as ASCII and SPLIT OCTAL. In most cases the printer manual also gives the codes.

In addition to the standard printer control codes described in this article, there are some programs that require special codes of their own. This allows you to perform routine and special tasks with respect to those programs.

Editors note: In addition to this type of pre-programming, many programs also automatically recognize the Epson set and will produce the proper type depending on action you take in the program. Other programs like word processors, dBASE, BASIC, probably any programming language, etc., also allow you to change the code on the fly. For instance, I have a 132 column Panasonic printer that normally prints 132 characters in a line. I do have an application where I print out the database of customers and I need more info than that to display on a line, so I kick the printer into compressed mode, do the printing, and then set it back when finished. This give me 255 characters on a line. In dBASE to send control characters out to a printer and not print them, the double question mark is used. For instance:

?? CHR(27)+CHR(15) places the printer in compressed mode.

?? CHR(27)+CHR(18) places it back in normal (released) mode.

One could just as easily use the proper codes to do enlarged mode, italics, etc. Get the idea? You'll have to consult the manual for the software that you use which has printing capabilities and see if you can control these things.

CLASSIFIEDS

Classified ads can be placed in this section free of charge by any H-SCOOP subscriber. Non-subscriber's ads are placed at \$10 per insertion in advance. Ads to appear more than once must be submitted separately each month publication is desired - maximum 2 months with 2 month wait. When placing ads, try to keep in mind the 'devaluation' of computers and components and adjust your price accordingly.

FOR SALE-I have the following Computer items for sale. All include shipping in the lower 48 and I will accept personal checks or trades. H/Z-248 computer system including the computer with 1.2 meg floppy, disk controller card, EGA video card, TTL monochrome monitor, 101 key keyboard, serial and parallel ports, Owner's AND Technical manual, DOS 3.2, "QUICKEN", WINDOWS, QUICKBASIC, INTEGRATED 7, NORTON UTILITIES and a few others. \$850. BOCARAM-AT board with 1 meg plus 128K of RAM installed. Includes software and manuals. RAM is 150ns and can be used in systems up to 16mhz for backfill, extended and/or expanded RAM. Has LIM 4.0 drivers and board hardware. \$225. Everex E-143 card fully populated with 1 meg of 100ns DRAM. Includes software and manuals. Can be used for backfill, extended and/or expanded RAM. Has LIM 4.0 drivers. \$225. NEC Multisync color monitor with cable and cord. This is the older model with TTL or ANALOG switching (analog requires an adapter for the cable). \$300. Zenith CGA card for the Z-150 series computers. \$95.00. Software for the H-89 on 5.25 and 8" media. FORTRAN-80, SID and ZSID debuggers and C-BASIC. Make offer. FORTRAN Heathkit programmed learning package with audio tapes and books. \$30.00. CP/M 3.0 for the Z-100. Great for those still running CP/M on the 100. \$30.00. Contact Mike Stover, (314) 831-8174 after 7:00 PM CST week nights or all day on the weekend.

FOR SALE-VGA FTM monitor. ASKING \$700.00. Dave James. 616-849-1111.

FOR SALE-I am selling on consignment for Doc Campbell the following: HP Deskjet Plus for \$650 plus shipping. Includes many

extras for desktop publishing. (See H-SCOOP issue 115 page 2 for a sample of the output and more info about this printer). Worth well over \$1300. Includes printer with parallel interface for a PC, HP 22708C 256K RAM cartridge, HP 22707A 128K RAM cartridge, HP 22707F FX 80 Epson Emulation cartridge, HP 22708C Times Roman and Helvetica Soft Font package for PS printing with fancy type, 9 unopened HP print ink cartridges and one new unused ink cartridge refill. Produce excellent print and graphics. Contact Henry Fale at Quikdata if interested.

FOR SALE--Z-248 PARTS consisting of: Floppy/hard controller card with spare card for parts, \$145. I/O CARD for parts, \$10 each. INTEL ABOVE BOARD with 2 meg of 120 ns RAM, \$275. Z-386/16 CACHE RAM, \$175. Full Height Tandon TM-100-2 360K disk drives, \$50 each. Contact Jim Cunningham/ (206) 733-8820 or 734-0461.

FOR SALE--A ton of H/Z/89/90 Hardware and software, both HDOS and CP/M, both new and used - far too much to list here. Send business size SASE for free listing. Everything available for best offer of what it's worth to you. Terry Hall/ 516 E Wakeman/ Wheaton, IL 60187-3760.

FOR SALE--I have a few monitors more than I need: MAGNOVOX 80 12" amber TTL monitor for \$ 80.00; ZVM-1230-A 12" Medium resolution green TTL monitor for 105.00; ZVM-1240 12" high resolution monochrome TTL monitor for 130.00; ZMM-1470-G 14" 15/18 KHz monochrome for \$145.00; ZCM-1490 14" COLOR VGA FTM monitor for \$600.00. If you are interested, please call (616) 849-1111 and ask for Dave James.

QUIKDATA BITS

I have lots of info from Lindley Systems on some neat software products he has for 8-bit machine and some 8-bit PC transfer stuff. Wanted to get that in this issue but with my super slow Z248, I'm very behind in my work. In fact, H-SCOOP is about one week behind schedule, and you're lucky you're even getting an issue this month! Many nights of work until 3AM have taken place here putting me in super burn out mode. My desktop publisher is normally fast, but now it is unbearably slow. For some reason, Quikdata has been busier than normal the past month or so. Thus we'll shoot for next month on the Lindley stuff.

Also next month if all goes well we will have a detailed report on the Sota 386i accelerator CPU for H/Z PC computers by Ron Pannatoni. Basically, it works fine as an accelerator, but he has had many headaches with trying to upgrade the CACHE RAM. He wants to issue this warning at this time:

"Henry: This afternoon I installed the 64Kbyte cache upgrade in the 386si. It conflicts with the hard disk. The computer locked up or malfunctioned when programs on the hard disk were accessed. I will give details in my article. I restored the original 16Kbyte cache and have normal operation from the Z151 once again (thank goodness). Please publish this note as a warning to your readers, since my article won't be ready until next month.

"Several of the claims that SOTA makes about this board are misleading almost to the point of being fraudulent.

"This board comes with 16K of cache memory. The sales information claims that the cache is expandable to 64K. It is, but the sales information didn't notify me that **my hard disk won't work anymore after the 64K is installed.**

"Since I boot up from a floppy and run most of my test programs from floppies, I thought the cache upgrade was working at the start. A technician at SOTA had told me that the sign-on message written by the 386si cache driver would still say that 16K rather than 64K of cache had been initialized at boot-up, so I didn't fret. In fact, one test that involves moving around 16K blocks of data in memory was running almost twice as fast with the 64K cache installed. But when I tried to access a program on the hard disk,

my computer locked up. I used a switch to reset the Z151, and I booted up next from a hard disk partition. When I tried to access a different partition on the hard disk, the FLOPPY drive came on and just kept spinning. Even the hardware switch wouldn't reset the computer! I shut it off and removed the 386si. Then I restored the original 16K cache. The 386si is in the Z151 again, and the hard disk works normally now.

"If you do opt for the Memory/16i upgrade from SOTA, be forewarned that **you will lose the cache memory because the MEMORY/16i bypasses it.** The product information for the 386si fails to mention this fact. Will no cache make a difference? Probably. With the cache enabled, my programs run about 5 times faster than they did on the original Z151 with an 8087. **With the cache disabled, they run only 10 percent faster!**

"I'm not coming out against the 386si. I'm just angry about having been suckered by the product information to the point that I spent \$100 getting the SRAM's for the upgrade, which are useless to me now. The basic board seems to work fine. In fact, I installed an 80387SX numeric coprocessor on the board, and it seems to work fine, too. But I was unhappy to lose memory over 640K, and I'm really sore that the cache upgrade won't work because **I phoned the technical department at SOTA and got explicit assurance that it would work before I bought the upgrade chips.** The extra cache made negligible difference in the speed that my floppy based number-crunching programs ran at. But I would be surprised if they didn't know about the hard disk problem as well."

OK, here's the warning, next month hopefully the review. When I see it all, I will contact SOTA and get down to the bottom of all of this. If there is fraud involved, perhaps we'll get the InfoWorld investigators involved. I just hope it's not another one of these "Zenith only" computer problems.

In the **NEW PRODUCTS department**, we have added the **2400 baud ZOOM half-card internal fax modem** for PC computers. **ZOOMFC24 - \$149**

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(414) 452-4344 Fax line
(414) 452-4345 Bulletin Board: 300/1200/2400/9600 (Hayes) auto-baud recognition. Character width of 10 which includes start bit, 8 data bits (7 for ASCII character + 1 parity), and one stop bit. The parity can be omitted and then transmission of graphics and binary data is possible. 8 data bits allows secure error-checking data transfer methods such as XMODEM and YMODEM to be used.

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